

CLAIMS

What is claimed is:

- 5           1.    A furnace for heating a glass waveguide fiber preform to a temperature sufficient to draw a fiber therefrom comprising a graphite, generally tubular muffle including an inner surface having a coating of high purity silicon carbide on the inner surface of the muffle.
- 10           2.    The furnace of claim 1, wherein the muffle further comprises at least two generally tubular sections.
3.    The furnace of claim 2, wherein the muffle  
15 comprises three generally tubular sections.
4.    The furnace of claim 1, wherein the coating has a thickness of at least about 2 mils.
- 20           5.    The furnace of claim 1, wherein the silicon carbide contains less than about 900 parts per billion of impurities.
- 25           6.    A method for producing a waveguide fiber in a draw furnace including a graphite, generally tubular muffle having an inner surface comprising the steps of:  
            providing a high purity silicon carbide coating on the inner surface of the graphite muffle;  
            disposing waveguide fiber preform in the muffle;  
30           heating the furnace to a temperature sufficient to draw fiber from the preform; and  
            drawing fiber from the preform.

7. The method of claim 6, wherein the temperature of furnace is at least about 1900°C.

5 8. The method of claim 6, wherein the temperature of the furnace is at least about 2000°C.

~~9. The method of claim 6, wherein the silicon carbide contains less than about 900 parts per billion of impurities.~~

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10. The method of claim 6, wherein the waveguide fiber drawn from the furnace has a point defect loss less than about 4%.

15 ~~11. The method of claim 1, wherein the waveguide fiber drawn from the furnace has a point defect loss less than about 1%.~~

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